

REMARKS

Applicants' attorney wishes to thank the Examiner for the courtesy of a telephone interview on October 24, 2003, also attended by co-inventor William J. Gamble. Support for the amendments may be found in original claims 2, 10 and 12 and at page 1, line 10 of the specification.

During the interview the meaning of the following terms were compared and contrasted:

“antioxidant” vs. “flame retardant”

“water resistivity” vs. “water vapor transmission”.

An antioxidant is a material incorporated in a substance to enable it to resist degradation due to the effects of oxidation. Antioxidants function to prevent oxidative breakdown of a material and are typically free radical traps or breakdown inhibitors. The term does not generically include “flame retardants”. “Flame retardants” serve to increase the ignition temperature or to promote charring of the material and are only effective under conditions of extreme heat. Although the act of burning is an oxidation reaction with ambient air, the term “antioxidant” is not regarded by those skilled in the art to include “flame retardation”.

“Water resistivity” has to do with the ability of water to degrade a material as by swelling or a hydrolysis reaction mechanism. It does not pertain to the ability of a surface to resist the transmission of water vapor therethrough. Thus, a porous surface may not experience degradation due to the presence of water but could still permit water vapor to pass through the pores. Thus the terms “water resistivity” and “water vapor transmission” are distinct in the art. The former relates primarily to degradation of the material itself while the latter relates primarily to the ability of the material to act as a barrier to water vapor transmission.

The following references are provided as support of these meanings:

Academic Press Dictionary of Science and Technology, Copyright by Academic Press, Inc., 1992.

Encyclopedia of Chemical Technology, Fourth Edition, Volume 1,
Copyright by John Wiley & Sons, Inc., 1991.

Van Nostrand's Scientific Encyclopedia, Seventh Edition,
Copyright by Van Nostrand Reinhold, 1989.

The present amendments serve to limit the claims to an optical device and to the use of the components (a) and (b) in amounts, within specified ranges, sufficient to improve the resistance of the film in the device to water vapor diffusion. Support may be found in original claims 12 and 14 and pages 6/17 and 7/16-20.

Claims 1-24, 28-29 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Honda et al. (US 6,211,358) in view of Sand et al. (US 5,104,450). Claims 25-27 stand rejected over Honda, in view of Sand and further in view of Perregaux, (US 4,217,160).

Both of these rejections are predicated on the combination of Honda and Sand. The Examiner's basic argument is that there is a reason to combine the teachings of the references and arrive at the invention even if the objective would be other than that of the present invention (reduced water vapor transmission). Applicants disagree.

It is axiomatic that when a combination of references is relied on there must be a reason for one skilled in the art to combine their teachings. Honda is directed to films and methods of preparing them. According to the examiner, Column 11/31 suggests adding plasticizers to the triacetyl cellulose dope for improving strength or water resistivity, a colorant, a UV absorber, or an antioxidant for giving resistivity to heat and moisture. The Examiner notes that Honda teaches a plasticizer amount of 5-30 wt% and lists triphenyl phosphate (TPP) as a suitable plasticizer. However, Honda also suggests benzoates and phthalates as suitable plasticizers in the same listing. Table I of the present application at page 14 demonstrates the comparative effects of TPP in combination with component (b) vs. TPP in combination with the phthalate or benzoate of Honda.

Inventive Examples 13 and 14 provide a water transmission rate under the accelerated test conditions of less than 36 g/m²/day/mm of film thickness. These values average over 40 for the phthalates, 39 for the benzoate,

and 41 for added TPP. For the accelerated conditions of this test, these differences are significant.

The Examiner acknowledges that Honda suggests an antioxidant but not that of component (b) of the invention. The Examiner turns to Sand for his disclosure of an aromatic polyol-bridged polyphosphate compound. However, here the Examiner mistakenly equates an "antioxidant" and a "fire retardant" in arriving at a motivation to combine the teachings of the two references. As explained above with respect to definitions, antioxidants and flame retardants are not the same and do not function in the same way. A suggestion to include an antioxidant in Honda does not lead one to the very different flame retardant of Sand. The last paragraph in section 4 of the rejection of March 20, 2003 inaccurately equates "water resistivity" and "water vapor transmission" as well as "antioxidant" and "flame retardant".

It is settled law that "obvious to try" is not a valid basis for a rejection. *In re Tomlinson et al.*, 363 F2d 928, 150 USPQ 623 (CCPA 1966); *In re Fine*, 5 USPQ 2d 1596 (CAFC 1988). Where the prior art gives no indication of which parameters are critical and no direction as to which of many possible choices is likely to be successful, the fact that the claimed combination falls within the scope of possible combinations taught therein does not render it unpatentably obvious. *In re O'Farrell*, 853 F2d 894, 7 USPQ 1673 (CAFC 1988).

According to the opinion in *In re Sernaker*, 217 USPQ 1 (CAFC 1983), if it is assumed that all the prior art references are related to the same art and therefore known to one of ordinary skill in that art, then the next questions are:

"...(a) whether a combination of the teachings of all or any of the references would have suggested (expressly or by implication) the possibility of achieving further improvement by combining such teachings along the line of the invention in suit, and (b) whether the claimed invention achieved more than a combination which any or all of the prior art references suggested, expressly or by reasonable implication." (Emphasis supplied)

Further, the court concluded:

"...prior art references in combination do not make an invention obvious unless something in the prior art references would suggest the advantage to be derived from combining their teachings." (Emphasis supplied)

The Examiner "...cannot pick and choose among the individual elements of assorted prior art references to recreate the claimed invention." He "...has the burden to show some teaching or suggestion in the references to support their use in the particular claimed combination." (Emphasis supplied.) *SmithKline Diagnostics Inc V Helena Laboratories Corp.*, 8 USPQ 2d 1468 (CAFC 1988).

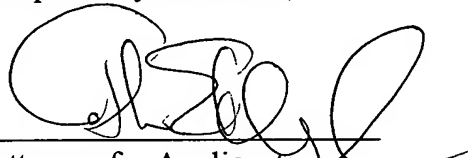
Thus, it is not obvious to one of ordinary skill in the art to combine the Honda and Sand references cited by the Examiner to arrive at an optical product containing the triacetyl cellulose (TAC) film containing the components (a) and (b) in the amounts sufficient to reduce the rate of water vapor transmission.

The present claims are directed to optical elements containing the described film. Water vapor transmission can be deadly to an optical display so the element, such as a polarizer, has to be protected. Sand is directed to polymeric blends. Honda is directed to preparing a cellulose acylate film. Neither Sand nor Honda is concerned with an optical device protected by a film from water vapor transmission. Accordingly, the combination of the invention is not suggested by the combination of references cited by the Examiner.

During the interview, the Examiner inquired about the comparison of the results in Table I. The test employed is an accelerated test in which the layer is subjected to 100% humidity at 100°F for a period long enough for the transmission rate to reach a steady state, about 3-4 days. This steam bath exposure is much more aggressive than most ambient situations. The differences shown under these test conditions would be greatly magnified under normal conditions. This property is extremely important for example in polarizer packages where any diffusion of water vapor will begin to dissolve the water soluble liquid crystal poly vinyl alcohol material comprising the polarizer and render it ineffective. The results of the invention are some 10-15% better than the check and some 3-5% better than the (non-prior art) comparisons tested. This difference in an accelerated test would be far greater in a real life situation.

The Examiner is respectfully requested to enter this amendment since it renders the case allowable or, in the alternative, reduces the number of issues on appeal. The Examiner is respectfully requested to withdraw the outstanding rejection and to pass the subject application to Allowance.

Respectfully submitted,



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Attachments (3): Academic Press Dictionary of Science and Technology,
pp. 131, 639, 841, 1062, 1083, 1550, 1668, 2315, and
2355
Encyclopedia of Chemical Technology, pp. 424, 258, 976,
and 977
Van Nostrand's Scientific Encyclopedia, p. 1167